

1 What is claimed is:

2 1. An improved tilt lock device for a chair having a spindle member and piston for
3 raising or lowering the chair, comprising:

4 (a) a spindle housing mounted to said spindle member and piston where said
5 spindle housing has a horizontal axis;

6 (b) a pivot pin carried by said spindle housing and extending laterally with
7 respect to said horizontal axis through said spindle housing;

8 (c) a bracket member pivotally mounted to said pivot pin for rotation relative to
9 said spindle housing;

10 (d) a locking shaft having an axis of elongation slidably carried by said bracket
11 member and by said spindle housing, said locking shaft extending laterally
12 with respect to said horizontal axis through said spindle housing and at least
13 in part through said bracket member where said locking shaft is responsive to
14 external force for axial displacement and is so adapted for carriage by said
15 spindle housing and said bracket member to permit slidable axial
16 displacement of said locking shaft with respect to said axis of elongation
17 upon the application of said external force;

18 (e) a pawl plate for engagement with said piston for raising or lowering said
19 chair having an upper surface and a lower surface where said pawl plate is
20 fixed for rotation with said locking shaft and extends laterally to said axis of
21 elongation;

22 (f) a barrier rib disposed in said upper surface of said pawl plate and projecting
23 above said upper surface, said barrier rib extending laterally with respect to
24 said axis of elongation;

25 (g) a pawl member carried by said pivot pin and mounted to permit rotation of
26 said pawl member with respect to said pivot pin; and

27 (h) a torsion spring carried by said pivot pin having a first extension and a
28 second extension for compressively biasing both said pawl member and said
29 pawl plate respectively so as to oppose rotation of said pawl plate, where said
30 first extension compressively engages said pawl member and said second

1 extension compressively engages said upper surface of said pawl plate
2 thereby biasing said second extension against said barrier rib axially with
3 respect to said axis of elongation whereby said locking shaft is precluded
4 from axial displacement with respect to said axis of elongation without
5 application of said external force applied to said locking shaft to overcome
6 the bias of said second extension against said barrier rib.

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8 2. The improved tilt lock device recited in Claim 1 where said bracket member comprises
9 a base for attachment to said chair laterally symmetrical with respect to said horizontal axis, and
10 a first rail and second rail integral with and extending from said base in a direction orthogonal to
11 said axis of elongation, said first and second rails laterally and oppositely spaced with respect to
12 said horizontal axis, where said first rail contains a slot extending therethrough for receiving said
13 locking shaft to permit rotation of said bracket member with respect to said locking shaft and
14 where said second rail has a plurality of apertures extending therethrough for receiving said
15 locking shaft such that extension of said locking shaft into one of said plurality of apertures locks
16 said bracket member and said spindle housing together rotationally.

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18 3. The improved tilt lock device recited in Claim 2 where said spindle housing has a first
19 opening adjacent said first rail and a second opening adjacent said second rail for receiving said
20 locking shaft such that when said locking shaft extends through both said first and second
openings said locking shaft is in fixed spatial relationship with said spindle housing.

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22 4. The improved tilt lock device recited in Claim 3 further comprising a coil spring means
23 associated with said bracket member and said spindle housing for biasing said bracket member
upon rotation with respect to said spindle housing.

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25 5. An improved tilt lock device for a chair of the type having a spindle member and
26 piston for raising or lowering the chair, a spindle housing mounted to said spindle member and
27 piston where said spindle housing has a horizontal axis, a pivot pin carried by said spindle
28 housing and extending laterally with respect to said horizontal axis through said spindle housing,
29 a bracket member pivotally mounted to said pivot pin for rotation relative to said spindle
30 housing, a locking shaft having an axis of elongation slidably carried by said bracket member
and by said spindle housing, said locking shaft extending laterally with respect to said horizontal

1 axis through said spindle housing where said locking shaft is responsive to external force for
2 axial displacement and is so adapted for carriage by said spindle housing and said bracket
3 member to permit slidable axial displacement of said locking shaft with respect to said axis of
4 elongation upon the application of said external force, the improvement comprising:

5 (a) a pawl plate for engagement with said piston for raising or lowering said chair
6 having an upper surface and a lower surface where said pawl plate is fixed for
7 rotation with said locking shaft and extends laterally to said axis of
8 elongation;

9 (b) a barrier rib disposed in said upper surface of said pawl plate and projecting
10 above said upper surface, said barrier rib extending laterally with respect to
11 said axis of elongation;

12 (c) a pawl member carried by said pivot pin and mounted to permit rotation of
13 said pawl member with respect to said pivot pin; and

14 (d) a torsion spring carried by said pivot pin having a first extension and a second
15 extension for compressively biasing both said pawl member and said pawl
16 plate respectively so as to oppose rotation of said pawl plate, where said first
17 extension compressively engages said pawl member and said second
18 extension compressively engages said upper surface of said pawl plate thereby
19 biasing said second extension against said barrier rib axially with respect to
20 said axis of elongation whereby said locking shaft is precluded from axial
21 displacement with respect to said axis of elongation without application of
22 said external force applied to said locking shaft to overcome the bias of said
23 second extension against said barrier rib.

24 6. The improved tilt lock device recited in Claim 5 where said bracket member comprises
25 a base for attachment to said chair laterally symmetrical with respect to said horizontal axis, and
26 a first rail and second rail integral with and extending from said base in a direction orthogonal to
27 said axis of elongation, said first and second rails laterally and oppositely spaced with respect to
28 said horizontal axis, where said first rail contains a slot extending therethrough for receiving said
29 locking shaft to permit rotation of said bracket member with respect to said locking shaft and
30 where said second rail has a plurality of apertures extending therethrough for receiving said

1 locking shaft such that extension of said locking shaft into one of said plurality of apertures locks
2 said bracket member and said spindle housing together rotationally.

3 7. The improved tilt lock device recited in Claim 6 where said spindle housing has a first
4 opening adjacent said first rail and a second opening adjacent said second rail for receiving said
5 locking shaft such that when said locking shaft extends through both said first and second
6 openings said locking shaft is in fixed spatial relationship with said spindle housing.

7 8. The improved tilt lock device recited in Claim 7 further comprising a coil spring means
8 associated with said bracket member and said spindle housing for biasing said bracket member
9 upon rotation with respect to said spindle housing.

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